

PATENT

Application No.: 09/017,735
Page 3

10. (new) The method of claim 9, wherein the providing step comprises identifying a peptide from a tumor-associated antigen.

11. (new) The method of claim 9, wherein the providing step comprises providing a peptide from an antigen that is derived from a pathogenic agent.

12. (new) The method of claim 9, wherein the providing step comprises providing a peptide of 15 residues or less.

13. (new) The method of claim 12, wherein the providing step comprises providing a peptide of 8, 9, 10 or 11 residues.

14. (new) The method of claim 9, wherein the providing step comprises providing a peptide having a binding affinity for an HLA-A2.1 molecule such that the ratio of an IC₅₀ of a standard peptide to an IC₅₀ of the peptide is at least 0.01.

15. (new) The method of claim 9, wherein the providing step comprises isolation of the one or more peptides from a natural source.

16. (new) The method of claim 9, wherein the providing step comprises synthesizing a peptide.

17. (new) The method of claim 16, wherein the synthesis comprises a chemical synthesis.

18. (new) The method of claim 9, wherein the another molecule is a lipid.

19. (new) The method of claim 9, wherein the another molecule is a T helper epitope.

PATENT

Application No.: 09/017,735
Page 4

20. (new) The method of claim 19, wherein the another molecule is a pan DR binding peptide.

21. (new) The method of claim 9, wherein the another molecule is cytotoxic T lymphocyte (CTL) epitope.

22. (new) The method of claim 21, wherein the another molecule is the peptide.

23. (new) The method of claim 9, wherein the another molecule is a carrier molecule.

24. (new) The method of claim 9, wherein the providing step comprises expressing a recombinant nucleic acid molecule that encodes the peptide.

25. (new) The method of claim 24, wherein the providing step comprises expressing a recombinant nucleic acid molecule that encodes the peptide and at least one additional peptide, with a *proviso* that an additional peptide is not an entire native antigen.

26. (new) The method of claim 9, wherein the providing step comprises providing the peptide comprised by a longer peptide, with a *proviso* that the longer peptide is not an entire native antigen.

27. (new) The method of claim 9, wherein the contacting step occurs *in vitro*.

28. (new) The method of claim 9, wherein the contacting step occurs *in vivo*.

PATENT

Application No.: 09/017,735
Page 5

29. (new) The method of claim 28, comprising a step of administering the compound to a human.

30. (new) The method of claim 28, further comprising a step of administering a booster dose and complexing the provided peptide, or a fragment thereof which comprises the epitope with an HLA molecule.

31. (new) A method of inducing an immune response, said method comprising steps of:

obtaining a peptide comprising an epitope that comprises an amino acid V, A, or T at a position two relative to an amino terminus of the epitope, and L, I, V, M, or A at a carboxyl terminus of the epitope, wherein said peptide comprises a binding affinity for an HLA-A2.1 molecule such that a ratio of an IC₅₀ of a standard peptide to an IC₅₀ of the peptide is at least 0.01, said peptide connected to another molecule to create a compound, with a *proviso* that neither the obtained peptide, the another molecule nor the compound comprise an entire native antigen;

complexing the peptide with an HLA molecule; and,
contacting a cytotoxic T lymphocytic (CTL) with the peptide-HLA complex,
whereby a CTL response is induced.

32. (new) The method of claim 31, wherein the obtaining step comprises expressing a nucleic acid sequence that encodes the peptide.

33. (new) The method of claim 31, wherein the obtaining step comprises expressing a nucleic acid sequence that encodes the peptide and at least one additional peptide, with a *proviso* that an additional peptide is not an entire native antigen.

34. (new) The method of claim 31, wherein the obtaining step comprises obtaining the peptide comprised by a longer peptide, with a *proviso* that a longer peptide is not an entire native antigen.

PATENT

Application No.: 09/017,735
Page 6

35. (new) The method of claim 31, wherein the obtaining step comprises isolation of the one or more peptides from a natural source.

36. (new) The method of claim 31, wherein the obtaining step comprises synthesis of a peptide.

37. (new) The method of claim 35, wherein the synthesis comprises chemical synthesis.

38. (new) The method of claim 30, wherein the obtaining step comprises obtaining a peptide of less than 15 amino acids in length.

39. (new) The method of claim 38, wherein the obtaining step comprises obtaining a peptide of 8, 9, 10 or 11 amino acids in length.

40. (new) The method of claim 30, further comprising a step of administering a booster dose and complexing the provided peptide, or a fragment thereof which comprises the epitope with an HLA molecule.

41. (new) *TB* A method of inducing a human immune response *in vivo* with a peptide comprising an epitope consisting of about 8-11 residues that will bind to an HLA-A2.1 molecule and induce an HLA-A2.1-restricted cytotoxic T cell response, said method comprising steps of:

providing a therapeutically effective human dose of a peptide comprising a putative T cell epitope and a pharmaceutical carrier, said putative epitope comprising a structural motif associated with peptide binding to HLA-A2.1, said structural motif comprising a first anchor amino acid at position two from an N-terminus of the epitope, said first anchor selected from the group consisting of V, A, and T, and a second anchor amino acid selected

PATENT

Application No.: 09/017,735

Page 7

from the group consisting of L, I, V, M, and A at a carboxyl-terminus of the epitope, with a *proviso* that said peptide does not comprise an entire native antigen;
complexing the provided peptide, or a fragment thereof which comprises the epitope, with an HLA molecule *in vivo* in a human; and,
contacting a cytotoxic T lymphocyte (CTL) with the complex *in vivo* in a human, whereby a CTL response is induced.

42. (new) The method of claim 41, wherein the providing step comprises identifying a peptide from a tumor-associated antigen.

43. (new) The method of claim 41, wherein the providing step comprises providing a peptide from an antigen that is derived from a pathogenic agent.

44. (new) The method of claim 41, wherein the providing step comprises providing a peptide of 15 residues or less in length.

45. (new) The method of claim 44, wherein the providing step comprises providing a peptide of 8, 9, 10 or 11 residues.

46. (new) A method of claim 41, further comprising a step of administering a booster dose of the provided peptide, or fragment thereof which comprises the epitope.

47. (new) The method of claim 41, wherein the providing step comprises providing a peptide having a binding affinity for an HLA-A2.1 molecule such that the ratio of an IC₅₀ of a standard peptide to an IC₅₀ of the peptide is at least 0.01.

48. (new) The method of claim 41, wherein the providing step comprises isolation of the one or more peptides from a natural source.

PATENT

Application No.: 09/017,735
Page 8

49. (new) The method of claim 41, wherein the providing step comprises synthesizing a peptide.

50. (new) The method of claim 49, wherein the synthesis comprises a chemical synthesis.

51. (new) The method of claim 41, wherein the providing step comprises expressing a recombinant nucleic acid molecule that encodes the peptide.

52. (new) The method of claim 51, wherein the providing step comprises expressing a recombinant nucleic acid molecule that encodes the peptide and at least one additional peptide, with a *proviso* that an additional peptide is not an entire native antigen.

53. (new) The method of claim 41, wherein the providing step comprises providing the peptide comprised by a longer peptide, with a *proviso* that the longer peptide is not an entire native antigen.

BB
~~54. (new)~~ A method of inducing a human immune response *in vivo*, said method comprising steps of:

~~providing a therapeutically effective human dose of a peptide in a pharmaceutical carrier, said peptide comprising an epitope that comprises an amino acid V, A, or T at a position two relative to an amino terminus of the epitope, and L, I, V, M, or A at a carboxyl terminus of the epitope, wherein said peptide comprises a binding affinity such that the ratio of an IC₅₀ of the peptide is at least 0.01, with a *proviso* that an obtained peptide is not an entire native antigen;~~

~~complexing the peptide with an HLA molecule *in vivo* in a human; and, contacting a cytotoxic T lymphocyte (CTL) with the peptide-HLA complex *in vivo* in a human, whereby a CTL response is induced.~~

PATENT

Application No.: 09/017,735
Page 9

55. (new) The method of claim 54, wherein the providing step comprises expressing a nucleic acid sequence that encodes the peptide.

56. (new) The method of claim 55, wherein the providing step comprises expressing a nucleic acid sequence that encodes the peptide and at least one additional peptide, with a *proviso* that the additional peptide is not an entire native antigen.

57. (new) The method of claim 54, wherein the providing step comprises obtaining the peptide comprised by a longer peptide, with a *proviso* that the longer peptide is not an entire native antigen.

58. (new) The method of claim 54, wherein the providing step comprises isolation of the one or more peptides from a natural source.

BB
59. (new) The method of claim 54, wherein the providing step comprises synthesis of a peptide.

60. (new) The method of claim 59, wherein the synthesis comprises chemical synthesis.

61. (new) The method of claim 54, wherein the providing step comprises obtaining a peptide of 15 amino acids or less in length.

62. (new) The method of claim 61, wherein the providing step comprises obtaining a peptide of 8, 9, 10 or 11 amino acids in length.

REMARKS

With this amendment, Applicants request entry of claims 9-62 in the patent application. These claims replace those originally filed. Thus, the request for species election